

IN THE CLAIMS:

Please cancel Claims 38-41, 45, 46, 59-62, 66 and 67 without prejudice or disclaimer of subject matter.

Please amend Claims 36 and 57 and add Claims 68-84 as follows. Note that all the claims currently pending in this application, including those not presently amended, have been reproduced below for the Examiner's convenience.

Claims 1-35 have been previously cancelled.

36. (Currently Amended) An exposure apparatus comprising:

an optical system having a plurality of spaces separated by a plurality of separating portions each including an optical element and a supporting portion for supporting the optical element, wherein each of two adjacent separating portions of the plurality of separating portions has an aperture through which a gas can be transmitted, and wherein apertures of the adjacent two separating portions are disposed at rotational positions, about an optical axis of said optical system, ~~with angles other than zero degree and 180~~ defined substantially as an angle of 90 degrees.

37. (Previously Presented) An apparatus according to Claim 36, further comprising an illumination optical system for illuminating a reticle, wherein said illumination optical system includes said optical system.

Claims 38-41 (cancelled).

Claims 42 and 43 have been previously cancelled.

44. (Previously Presented) A device manufacturing method, comprising the steps of:

exposing a substrate by use of an exposure apparatus as recited in Claim 36;

and

etching the exposed substrate.

Claims 45 and 46 (Cancelled).

Claims 47-56 have been previously cancelled

57. (Currently Amended) An exposure apparatus, comprising:

a first separating portion for separating a first space and a second space from each other, said first separating portion having a first aperture;

a second separating portion for separating the second space and a third space from each other, said second separating portion having a second aperture; and

supplying means for supplying a gas to one of the first and third spaces;

wherein a relative rotational position of said first and second apertures about an optical axis of said exposure apparatus ~~define~~ substantially defines an angle ~~other than zero~~

~~degree and 180~~ of 90 degrees.

58. (Previously Presented) An apparatus according to Claim 57, wherein said first separating portion includes a first transparent optical element and a first supporting portion for supporting the first transparent optical element, and wherein said second separating portion includes a second transparent optical element and a second supporting position for supporting said second transparent optical element.

Claims 59-62 (Cancelled).

Claims 63 and 64 have been previously cancelled.

65. (Previously Presented) A device manufacturing method, comprising the steps of:

performing an exposure process on a substrate by use of an exposure apparatus as recited in claim 57; and

performing an etching process to the exposed substrate.

Claims 66 and 67 (Cancelled)

68. (New) An exposure apparatus, comprising:

an optical system having a first optical element, for directing light from a light source to a member to be exposed;

wherein said first optical element serves to separate first and second spaces inside said optical system, and wherein said first optical element has a first notch formed at an end portion outside an effective light flux of light from the light source.

69. (New) An apparatus according to Claim 68, wherein said first optical element is formed with a plurality of first notches.

70. (New) An apparatus according to Claim 68, wherein said optical system has a second optical element having a second notch formed at an end portion outside the effective light flux of the light from the light source, and wherein the first notch and the second notch are disposed at different positions with respect to a rotational direction about an optical axis of said optical system.

71. (New) An apparatus according to Claim 70, wherein said second optical element serves to separate the second space and a third space.

72. (New) An apparatus according to Claim 68, wherein said optical system has a second optical element that serves to separate the second space and a third space, wherein said second optical element has a second notch formed at an end portion outside the effective light

flux of the light from the light source, and wherein the first notch and the second notch are disposed at positions, with respect to a rotational direction about an optical axis of said optical system, being mutually shifted substantially by an angle of 180 degrees.

73. (New) A device manufacturing method, comprising the steps of:

exposing a member to be exposed, by use of an exposure apparatus as recited in Claim 68; and  
developing the exposed member.

74. (New) An exposure apparatus, comprising:

a first separating portion for separating a first space and a second space from each other, said first separating portion having a first aperture and a second aperture; and  
a second separating portion for separating the second space and a third space from each other, said second separating portion having a third aperture and a fourth aperture;  
wherein said first aperture, said third aperture, said second aperture and said fourth aperture are disposed along the named order, with respect to a rotational direction about an optical axis of said exposure apparatus.

75. (New) An apparatus according to Claim 74, wherein said third aperture is disposed approximately at the middle between said first and second apertures with respect to the rotational direction about the optical axis of said exposure apparatus, and wherein said fourth aperture is disposed approximately at the middle between said first and second apertures with

respect to the rotational direction about the optical axis of said exposure apparatus and at a position different from the position of said third aperture.

76. (New) An apparatus according to Claim 74, wherein (i) said first aperture is disposed at a position shifted from said third aperture substantially by an angle of 90 degrees with respect to the rotational direction about the optical axis of said exposure apparatus, (ii) said third aperture is disposed at a position shifted from said second aperture substantially by an angle of 90 degrees with respect to the rotational direction about the optical axis of said exposure apparatus, (iii) said second aperture is disposed at a position shifted from said fourth aperture substantially by an angle of 90 degrees with respect to the rotational direction about the optical axis of said exposure apparatus, and (iv) said fourth aperture is disposed at a position shifted from said first aperture substantially by an angle of 90 degrees with respect to the rotational direction about the optical axis of said exposure apparatus.

77. (New) A device manufacturing method, comprising the steps of:  
exposing a member to be exposed, by use of an exposure apparatus as recited in Claim 74; and developing the exposed member.

78. (New) An exposure apparatus, comprising:  
an optical system having a first transmission-type optical element, for directing light from a light source to a member to be exposed;  
wherein said first transmission-type optical element serves to separate first and

second spaces inside said optical system, and wherein said first transmission-type optical element has a first notch.

79. (New) An apparatus according to Claim 78, wherein said first transmission-type optical element is formed with a plurality of first notches.

80. (New) An apparatus according to Claim 78, wherein said optical system has a second transmission-type optical element having a second notch, and wherein the first notch and the second notch are disposed at different positions with respect to a rotational direction about an optical axis of said optical system.

81. (New) An apparatus according to Claim 80, wherein said second transmission-type optical element serves to separate the second space and a third space.

82. (New) An apparatus according to Claim 78, wherein said optical system has a second transmission-type optical element that serves to separate the second space and a third space, wherein said second transmission-type optical element has a second notch formed at an end portion outside an effective light flux of light from the light source, and wherein the first notch and the second notch are disposed at positions, with respect to a rotational direction about an optical axis of said optical system, being mutually shifted substantially by an angle of 180 degrees.

83. (New) An apparatus according to Claim 78, further comprising gas supplying means for supplying a predetermined gas into the first space.

84. (New) A device manufacturing method, comprising the steps of:  
exposing a member to be exposed, by use of an exposure apparatus as recited in Claim 78; and  
developing the exposed member.